REMARKS/ARGUMENTS

The Examiner Rejected claims 19 and 32 under 35 U.S.C. §102(e) as being anticipated by U.S. 2002/0125821 to Steckl et al. ("Steckl"). The Examiner further rejected claims 6-7 and 17-18 under 35 U.S.C. §103(a) as being obvious over Steckl. The Examiner also rejected claims 1-5, 8-13 and 25-31 as being obvious over Steckl in view of U.S. Patent No. 6,254,806 to Valdna et al. ("Valdna").

A. The Claim Amendments

Amendments were made to claims 1 and 2, to correct an error where claim 2 was broader than claim 1 with respect to the rare earth activated phosphor.

B. The §102 Rejection

The Examiner rejected claims 19 and 32 as being anticipated by Steckl. Applicants respectfully traverse.

Steckl discloses in paragraph 0026 a display having in order: a transparent substrate; a phosphor layer; a thick film dielectric layer; and further layers thereon. In this embodiment represented by Figure 4 it is stated that a protective layer may be provided between the phosphor and the thick film dielectric layer. However, as can be seen in Figure 4, this protective layer that may be AlN is provided on the rear side of the phosphor away from the viewing side of the display. Furthermore, there is no teaching as to the thickness of such a protective layer.

In contrast, claim 32 recites that the aluminum nitride layer is on a top surface of the phosphor film and that it has a thickness of about 30nm to about 50nm. That is, in the embodiment of the improved phosphor claimed in claim 32, the aluminum nitride barrier layer is stated to be provided on a top side of the phosphor film which would mean it is on the opposite side of the thick film dielectric layer on the viewing side of the display. This is in contrast to that taught by Steckl, where the protective layer is between the phosphor and the thick film dielectric layer on the opposite side of the viewing side of the display. Furthermore, claim 32 specifies that the aluminum nitride layer has a thickness of about 30nm to about 50nm that is not taught or disclosed by Steckl.

As the Examiner is undoubtedly well aware, a single reference must disclose each and every claimed limitation of a claim to anticipate that claim. Claim 32, from which claim 19 depends, recites that the aluminum nitride barrier layer is about 30nm to about 50nm thick. Steckl fails to disclose or even suggest an aluminum nitride

barrier layer of the claimed thickness. Thus, for at least this reason, Steckl fails to anticipate the present claims. Withdrawal of this rejection is requested.

C. The §103 Rejection Based on Steckl

The Examiner rejected claims 6-7 and 17-18 under 35 U.S.C. 103(a) as being unpatentable in view of Steckl. Again, the Applicant respectfully disagrees with the Examiner.

The Examiner asserts that Steckl discloses the display as discussed above. The Examiner acknowledges that Steckl does not disclose a zinc sulfo-selenide phosphor, but believes that it would be obvious to use such a phosphor material and that it is an optimizable feature in order to provide a high temperature phosphor that is stable and can withstand high temperatures during sintering of the thick film dielectric layer.

As noted above, Steckl teaches a different type of thick film dielectric electroluminescent display than the present invention, wherein the display is constructed from the viewing side up. The thick film dielectric layer is formed over top of the phosphor layer in Steckl. The display of Steckl requires that the phosphor layer be subjected to temperatures sufficiently high (at least about 700 Celsius) to permit processing of the thick dielectric layer.

In contrast, this is not the case in the present invention since the thick film dielectric layer is formed before the phosphor layer is deposited. The aluminum nitride layer of the presently claimed invention stabilizes the display structure during display operation, not during its fabrication. The advantages of the presently claimed invention provided for example at pages 13-14 of the description are not realized or taught by Steckl.

The Examiner provides no support for her statement that zinc sulfo-selenide is a high temperature phosphor. Even assuming the truth of this statement however, this does not render the use of such a phosphor obvious in the device of Steckl absent a suggestion to use such a phosphor. That is, the Examiner is well aware that a recognition that something can be done (or in this case is suitable for use in an invention) is distinct from a motivation to use it. Absent such an explicit suggestion or motivation, the Examiner's combining of the two references is a classic example of impermissible hindsight reconstruction. *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 26 USPQ2d 1018 (Fed. Cir. 1993). Thus, even assuming that a zinc

sulfo-selenide phosphor would be suitable for use in the device of Steckl (a proposition that the Examiner has not provided adequate support for by the way), the Examiner's failure to provide reasons why someone skilled in the art would choose that particular phosphor over any other suitable phosphor makes the present rejection invalid.

Conclusory statements on obviousness, such as those provided by the Examiner in this case, are insufficient to sustain an obviousness rejection. *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002).

Furthermore, the Examiner's statement that the ratio of selenium to sulfur in the phosphor is an optimizable feature that only involves routine skill in the art is incorrect. First, this is a conclusory statement on the Examiner's part wherein no support is provided. Second, Applicants submit that the Examiner is trivializing the differences between phosphors having different amounts of selenium and sulfur. Such differences result in different compositions, having a number of different properties and structures. The simplistic statements of the Examiner in this regard are insufficient to support such an obviousness rejection.

Thus, because Steckl does not teach any type of zinc sulfo-selenide phosphor nor does it teach providing an AlN barrier layer adjacent a zinc sulfo-selenide phosphor in order that this phosphor is stable during its operation, it fails to teach the desirability of making the claimed invention. Therefore, Steckl cannot render these claims obvious. Withdrawal of this rejection is requested.

D. The §103 Rejection Based on Steckl and Valdna

The Examiner rejected claims 1-5, 8-13 and 25-31 under 35 U.S.C. 103(a) as being unpatentable over Steckl in view of Valdna. Again, the Applicant respectfully disagrees with the Examiner.

Steckl is discussed above. Valdna is relied upon for the teaching of a zinc selenide phosphor as a high temperature phosphor and that the use of such a phosphor in Steckl would improve the stability of the display.

First, there is no motivation to combine the teachings of the two references as they relate to different subject matter and different forms and uses of the respective phosphors. That is, Valdna discloses a zinc selenide phosphor that is a powder dispersed in a polymer matrix to form a film that converts x-ray radiation to visible light for x-ray fluoroscopy or imaging. The stability of vacuum deposited electroluminescent phosphor films, such as in Steckl, cannot be predicted from the

behavior of such dispersed powder phosphor films (as disclosed in Valdna) since the excitation mechanism is different (x-ray photoluminescence rather than electric field induced electroluminescence) and the physical structure is also different. Typically, the operation lifetime of electroluminescent devices using dispersed powder phosphor layers is much less than that of vacuum deposited phosphor films. The Examiner's position is simply unsupported by the disparate structure and uses of the phosphors in the respective references. One skilled in the art would not seek to combine the teachings of the two since there is no suggestion that the phosphors of Valdna would be suitable for use in the device of Steckl.

The behavior of various types of thin films in contact with other films such as phosphor films is dependent of the chemical and physical properties of each film and further, the deposition and formation methods for the films have a major effect on the performance of the laminates. That is, the performance and stability of the laminates cannot be determined using any routine optimization processes due to the large number of variable inherent in the laminate fabrication processes.

Furthermore, even assuming the propriety of combining Steckl and Valdna, such a combination would still not disclose or suggest all of the limitations of the present claims. Taking into account the discussion of the immediate previous paragraph, merely disclosing a zinc selenide phosphor does not overcome the deficiencies of Steckl. In other words, the combination of the teachings of these two cited references does not provide the invention of these claims as each and every element is not disclosed therein. The AlN barrier layer having the taught thickness is not disclosed nor its advantages in improving the operating life and luminance of the phosphor.

In view of the foregoing it is asserted that these claims are not obvious in view of the teachings of Steckl and Valdna. These claims are unobvious and patentable.

CONCLUSION

Applicants respectfully request reconsideration of the application in light of the above comments. Applicants respectfully submit that all claims recite patentable subject matter. If there are any issues remaining, the Examiner is encouraged to

contact the undersigned in an attempt to resolve any issues. If any fee or extension is due in conjunction with the filing of this amendment, Application authorizes deduction of that fee from deposit account 06-0308.

Respectfully submitted,

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